



Lecture 2

Inheritance and Polymorphism

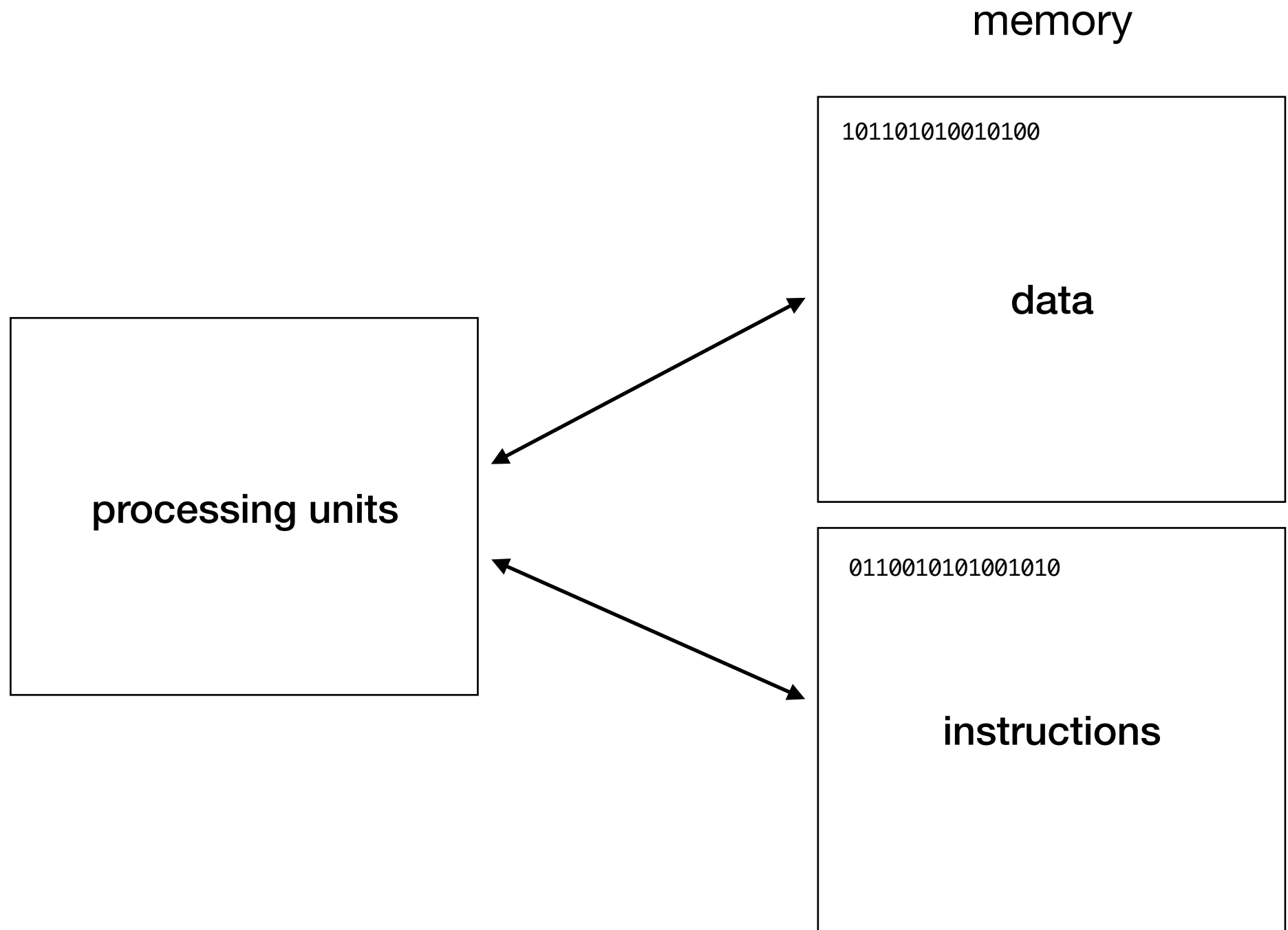
For questions / requests on lab bidding
and allocation, please contact

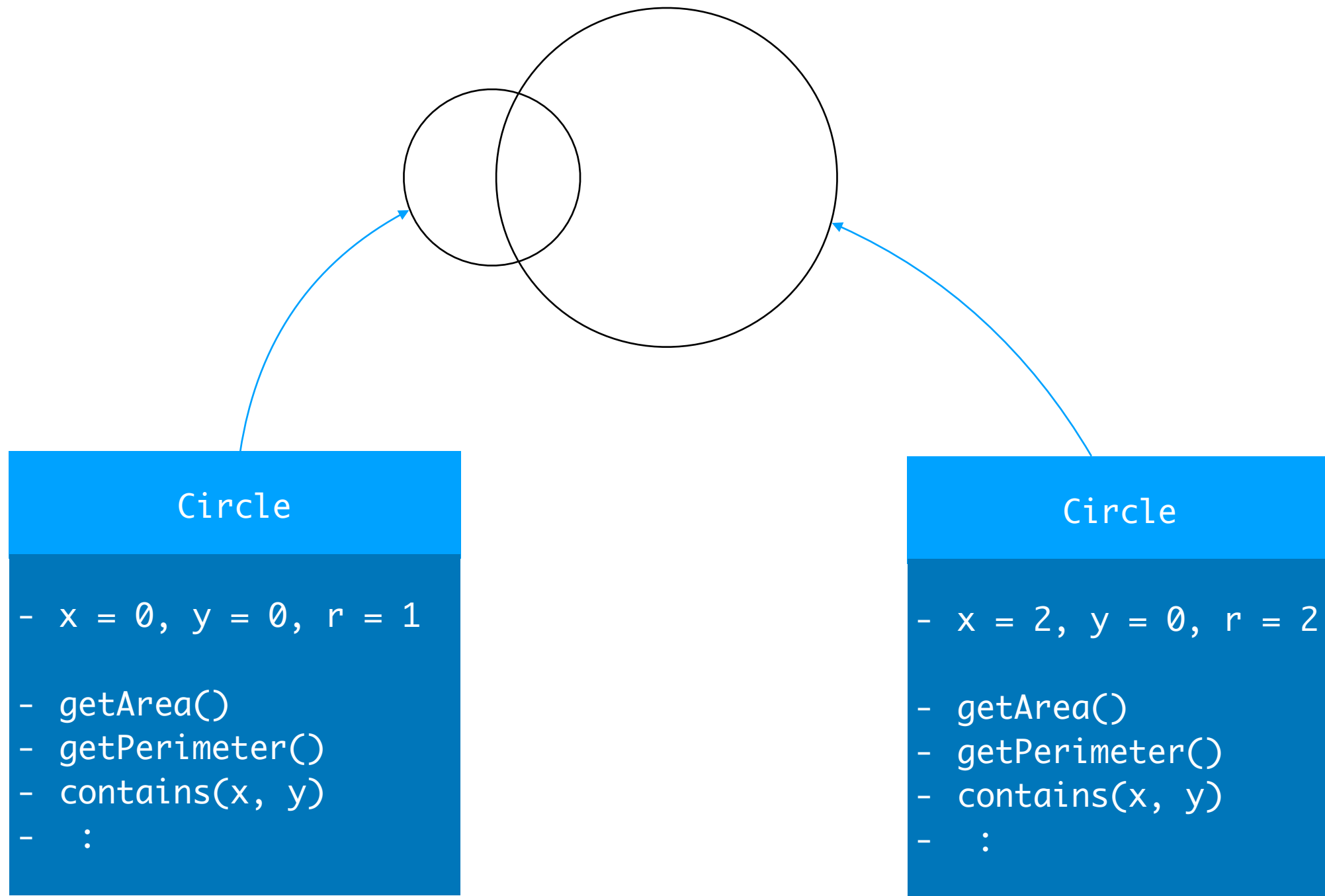
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**Last week, in
CS2030..**

Very very high-level view





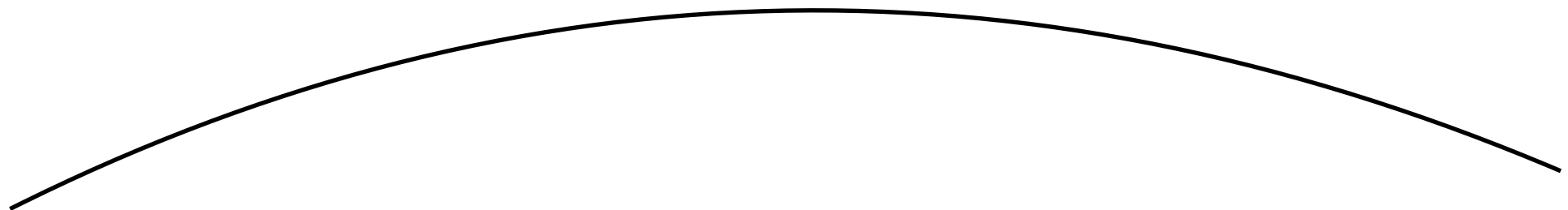
Two circle objects

Abstraction Barrier

usage of circle



client

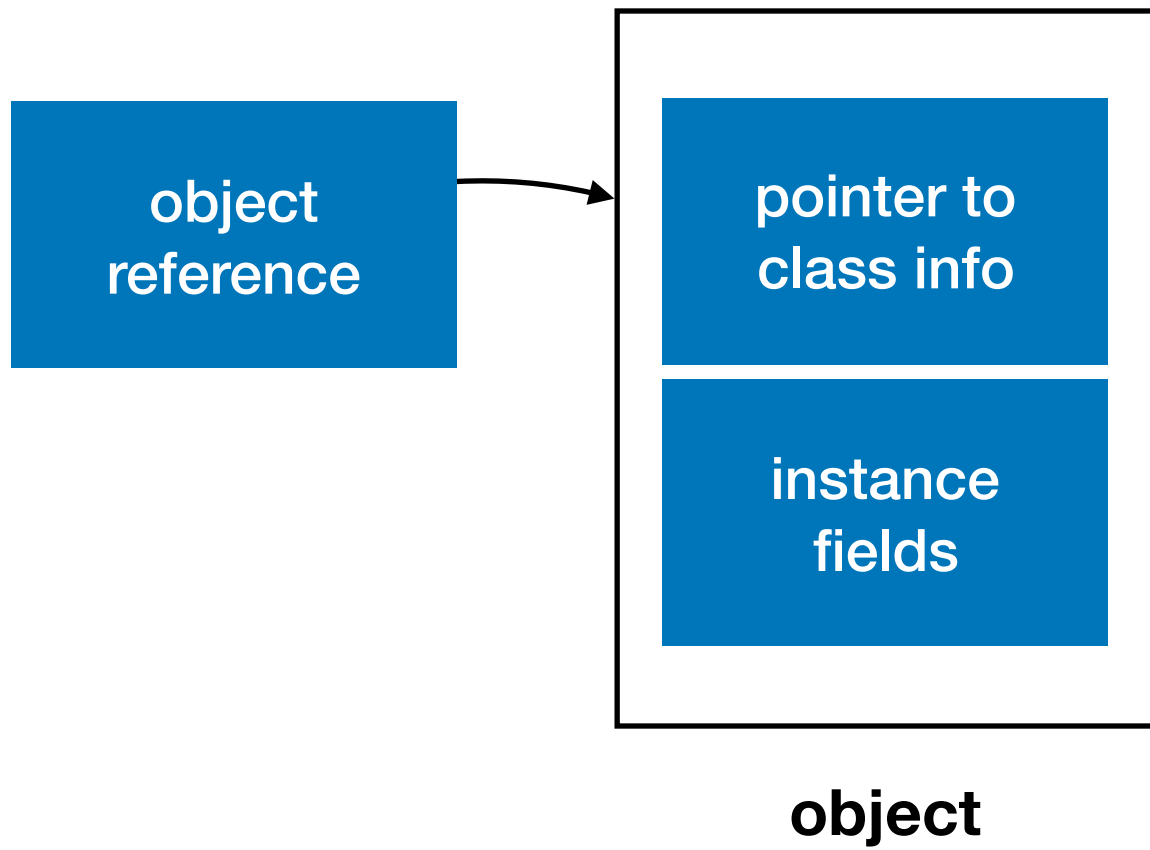


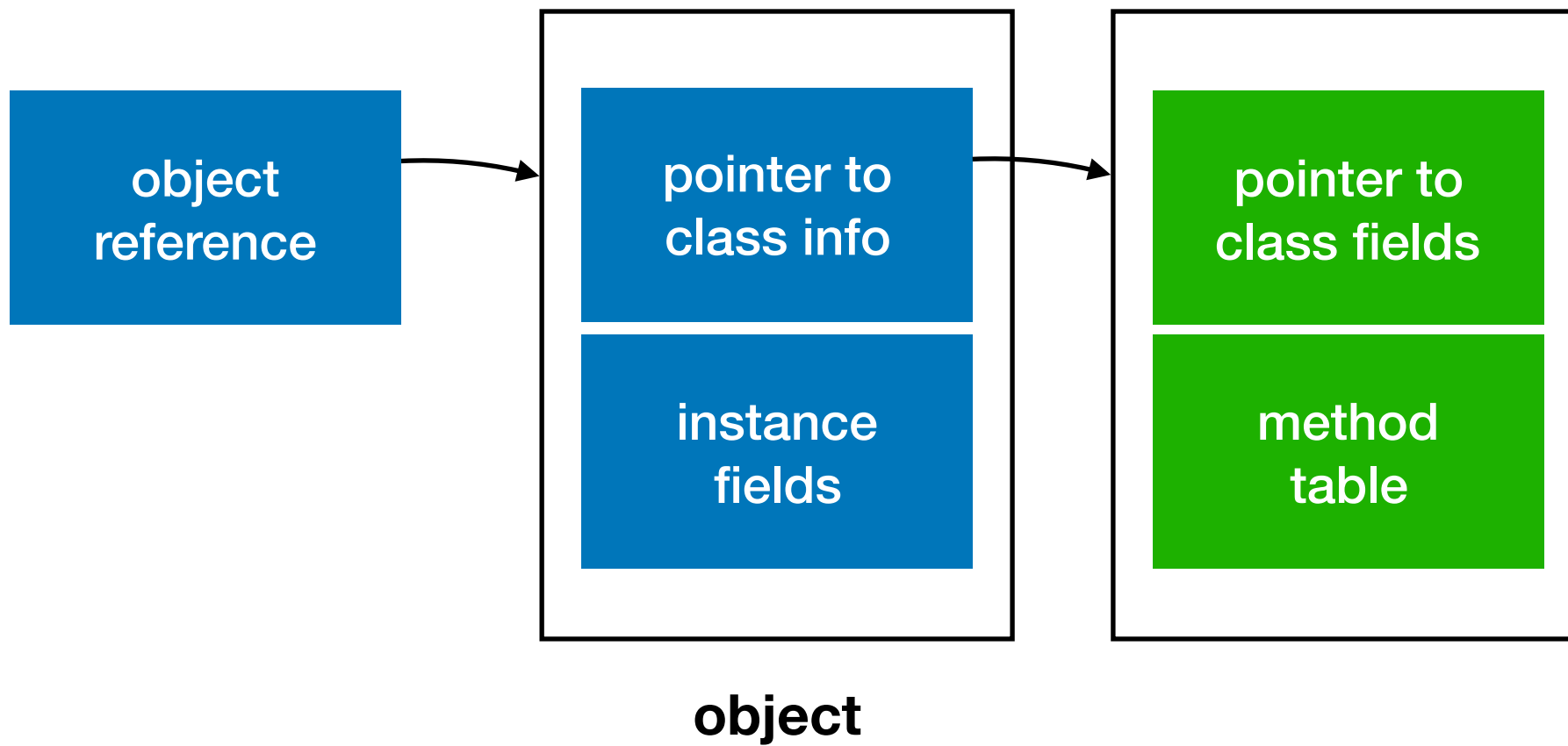
implementation of circle

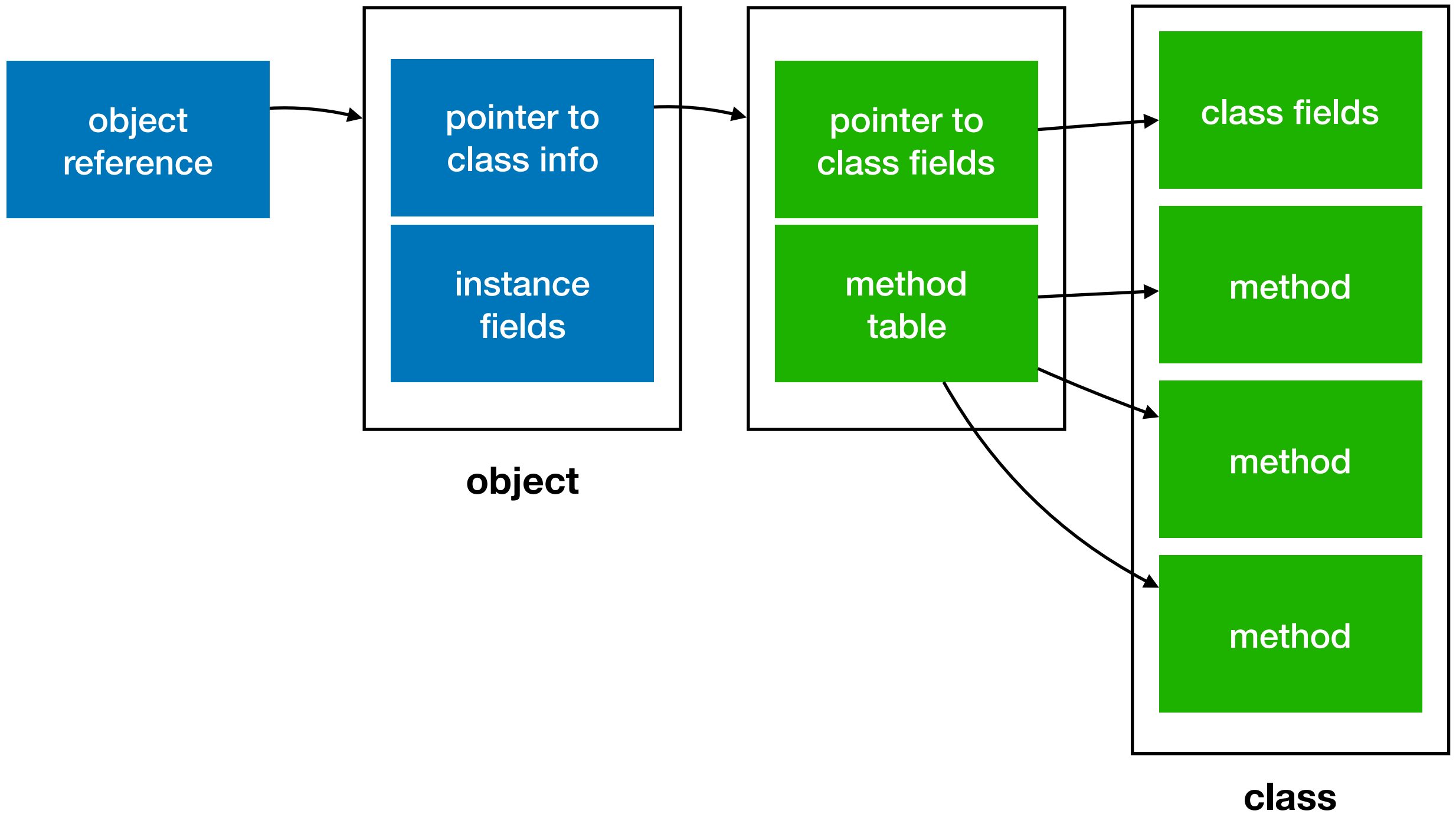


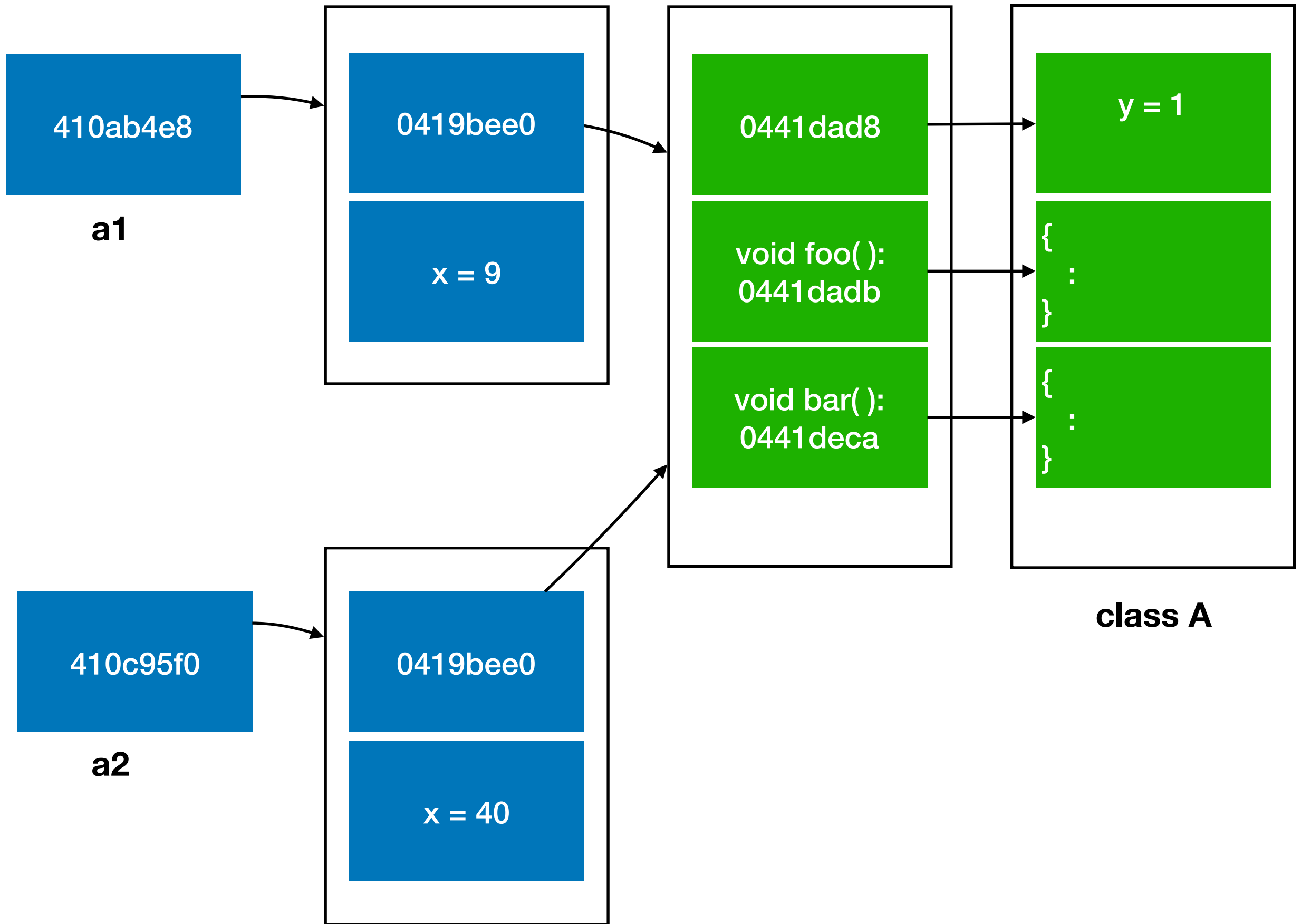
implementer

Java Memory Model







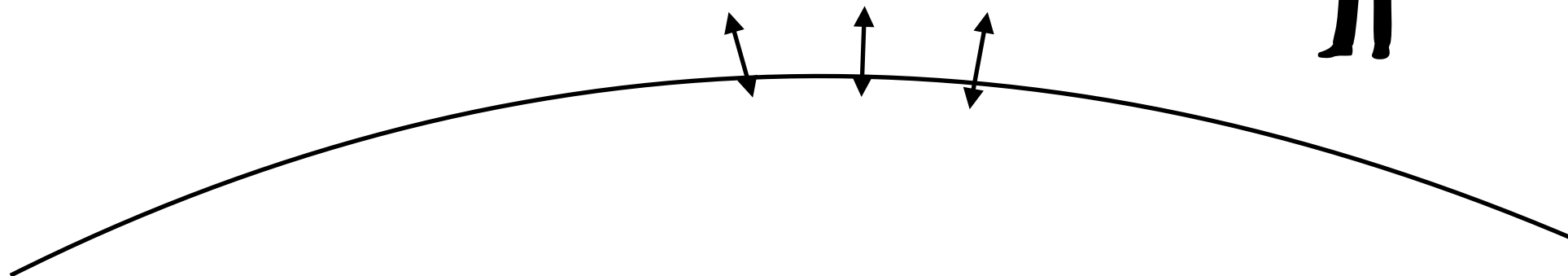


Abstraction Barrier

```
Point p = new Point(1, 0);  
Circle c = new Circle(p, 2);  
double a = c.getArea();
```



client




implementer

```
class Circle {  
  :  
  :  
}
```

```
class Point {  
  :  
  :  
}
```

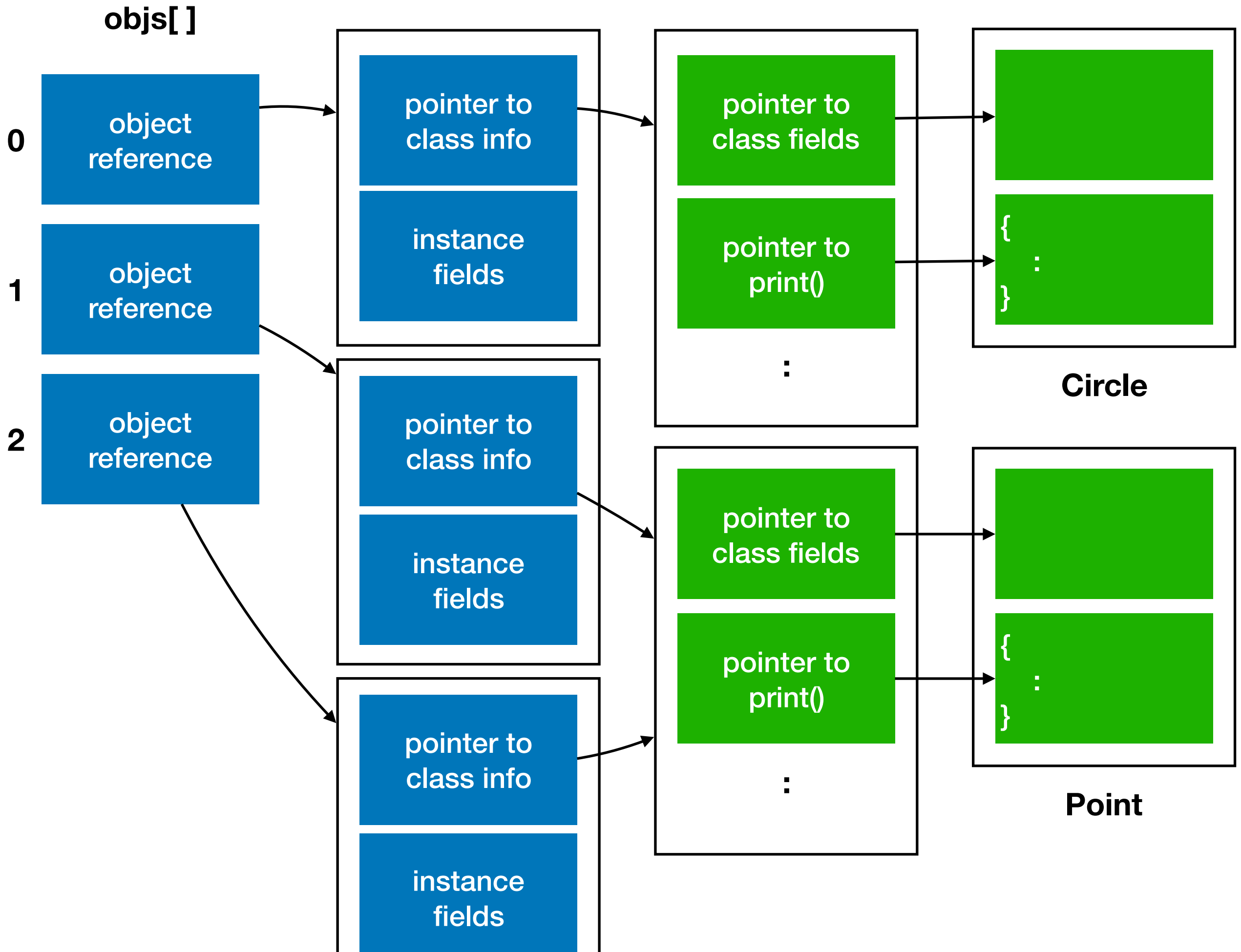
An interface or protocol
is a contract between
two sides of the
abstraction barrier

Let's  **Java™**

In Java,

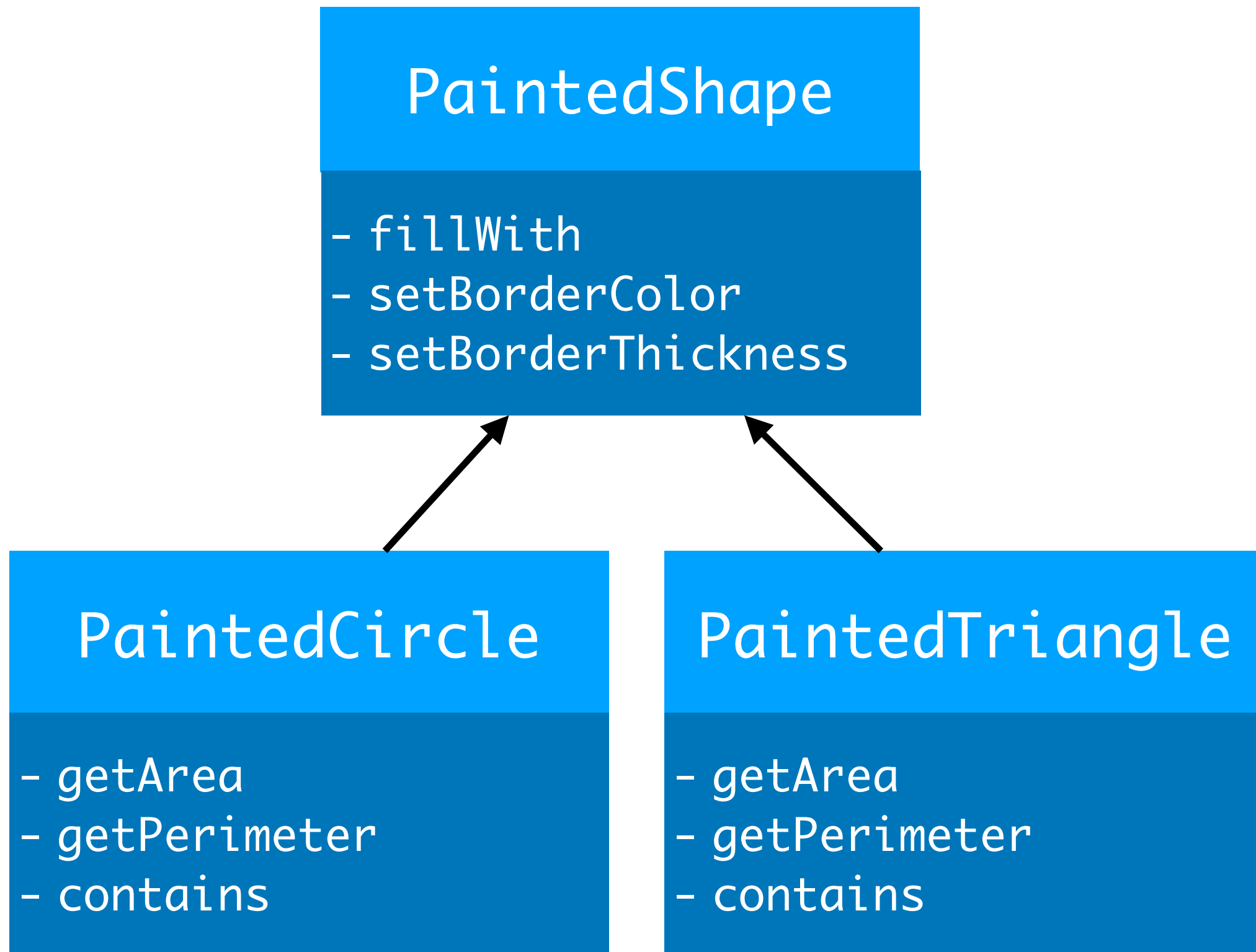
- **an interface is a type**
- **a variable can have more than one types**

**Java uses late
binding for methods
invocation**



Polymorphism

“
“
Each significant piece of functionality in a program should be implemented in just one place in the source code.
”
”



Inheritance

